Please replace the paragraphs beginning at page 4, line 1:

network, it might be thought that the invention could be implemented simply by providing a look-up table mapping each user terminal IMSI to a switch node. However, this is unsatisfactory because, for security reasons, the majority of registrations with the network do not involve the transmission of the IMSI. Instead, on registration, a Temporary International Mobile Subscriber Identity is allocated, and used in future registrations where possible. For security reasons, the TMSI is uncorrelated with the identity of the user or terminal and hence, it is unsuitable for the purposes of the invention.

According to a further aspect of the invention, therefore, the data transmitted is indicative of the switch node to be used, rather than the user. Thus, security is maintained.

Particularly preferably, the data comprises an indication of the last switch used by the terminal, together with a flag indicating that that switch is to be used again. Thus, the data can be present in signals both from terminals which require use of a specific switch node and terminals which do not, the latter sending a different flag value to indicate that use of the previous switch node is not mandatory.

Thus, the invention is able to allow certain terminals to select use of a 20 switch node which will give simpler connection, since it is closer to the source or destination of most of their calls. Further, where (as described in our earlier application number EP 0808037) traffic is carried on the terrestrial

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Figure 5 illustrates schematically the disposition of satellites forming part of Figure 1 in orbits around the Earth;

Figure 6 illustrates the data rates carried between components on Earth;

Figure 7 is a flow diagram showing schematically the process performed by the network on initial registration of a terminal;

Figure 8 (comprising Figures 8a and 8b) is a flow diagram showing the process performed in the network to allocate a temporary identification;

Figure 9 (comprising Figures 9a and 9b) is a flow diagram showing 10 the process performed by the user terminal and the network respectively on a subsequent registration; and

Figure 10 is a flow diagram modifying the process of Figure 7 in a second embodiment of the invention.

FIRST EMBODIMENT

Referring to Figure **1,** a satellite communications network according to this embodiment comprises mobile user terminal equipment 2a, 2b (e.g. handsets 2a and 2b); orbiting relay satellites 4a, 4b; satellite Earth station nodes 6a, 6b; satellite system gateway stations 8a, 8b; terrestrial (e.g. public switched) telecommunications networks 10a, l0b; and fixed telecommunications terminal equipment l2a, 12b

Interconnecting the satellite system gateways 8a, 8b with the Earth station nodes 6a, 6b, and interconnecting the nodes 6a, 6b with each other, is a

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by the node 6a. Alternatively, it may take place on an established signalling channel as a re-registration process initiated either by the terminal 2a or the node 6a.

In a step 1004, the IMSI is passed from the Earth station node 6a to the database station 15 via a signalling link 60. At the database station 15, the IMSI is looked up in a registration look up table. This look up process is conveniently performed in parallel with other look up operations such as the supply of authentication data from the database station 15. For each IMSI stored in the table, there is a corresponding entry indicating whether the status of the user is normal" or "special". The significance of these entries will be discussed below. The entry is signalled back from the database station 15 to the node 6a.

Where (step 1006) the entry indicates that the user terminal 2a is of "normal" status, the allocation of an Earth station node proceeds (shown generally as step 1008) conventionally; it may be based, for example, on a comparison of the position of the mobile user (determined, as discussed above by delay and Doppler measurements) and the position of the nodes 6, to allocate the mobile user to the closest node. Alternatively, it may be based upon present and predicted link quality as disclosed in our earlier application WO 96/16488, incorporated herein in its entirety by reference.

For international mobile subscriber identities where the subscriber is indicated as having "special" status, an additional entry is stored in the table.

Please replace the paragraphs beginning at page 20, line 1.

Accordingly, in step 1216, the node 6a determines the state of the flag. If set, the last used node 6b is re-allocated to the user terminal 2a, and a signalling link is set up to that node 6b which then controls the subsequent call via the satellite base station portion 22 of the node 6a, as discussed above.

On the other hand (step 1216), if the flag is not set, a suitable node is allocated (for example node 6c or 6d) in step 1218, in the same fashion as in step 1008 of Figure 7. The new allocated node receives from the communicating node 6a the identity of the last allocated node, to enable the retrieval of authentication and other data for communication with the user terminal 2a in known fashion.

Thus, a one bit flag can be used, together with the identity of the last registered node, to ensure that the satellite network always allocates the same node 6b to the user terminal 2a. The user terminal 2a does not itself need to store or generate any special data indicating that it falls into a 1)articular category, or indicating what the identity of its allocated Earth station node should be; this information is initially derived from the subscriber identity number (IMSI) by the system, and then passed back to be temporarily held on the user terminal 2a between subsequent re-registrations.

In this fashion, it is not necessary to repeatedly send the IMSI over the 20 air, which improves confidentiality and security of communication.